

Claims

1. A prefabricating rack frame comprised of a column made of a steel square tube, a cross member made of a bent steel plate, by which a square is formed,
5 and multiple shelf plates are placed, the prefabricating rack frame comprising;

the column having plural inner slots, and plural outer slots, in which the inner slots are longitudinally formed along a middle portion of at least one surface of the column, and are arranged in one or two row in the center, the outer slots are formed at the respective outer side of each line of the inner slot, and each outer slot
10 is located between the upper and lower row of the inner slot at equal interval; and

the cross member having a vertical web, an upper/lower horizontal flange which are contacted on the outer surface of the column, and plural inner/outer hooks, the inner/outer hooks are formed at each longitudinal end of the vertical web and are rectangularly bent toward the extending direction of the horizontal flange, thereby
15 each inner/outer hook is inserted into the inner/outer slot provided at any one side of the column, and is firmly engaged into the respective slot.

2. The prefabricating rack frame as set forth in claim 1, wherein the cross member further has a location restrictor formed at the inside of the inner hook and bent parallel to the upper horizontal flange, by which the location restrictor is fully
20 contacted on the side surface of the column along the upper horizontal flange.

3. The prefabricating rack frame as set forth in claim 1, wherein the column has a pair of round openings formed at the outer side of each lowest inner slot in a parallel way, the vertical web has a hole which overlaps any of the round
25 openings, in which the round openings and the hole are for engaging the column and the cross member by a screw.

4. The prefabricating rack frame as set forth in claim 1, wherein the inner
30 slots are arranged in two vertical rows and in the form of the three horizontal rows

along the upper and lower side, and the inner slots and outer slots have a vertical rectangular form and each bottom of the rectangular slants to the vertical center line of the once side of the column; and the inner/outer hook has the same incline as the inner/outer slot, thereby the hooks are fully contacted on the side surface of the slots.

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5. The prefabricating rack frame as set forth in claim 1, wherein the inner slots are arranged in one vertical row and in the form of the three horizontal rows along the upper and lower side, and the inner slot has a trapezoid shape, in which the upper side is longer than the lower side, and the outer slots are configured in a vertical rectangular shape each of which inclines as the same slant of right/left side of the inner slot; and the inner/outer hook has the same incline as the inner/outer slot, thereby the hooks are fully contacted on the side surface of the slots.

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6. The prefabricating rack frame as set forth in any one of claims 1, 4, and 5, wherein the inner vertical side of the inner/outer hook is inclined outward along the direction from top to bottom of the hook; and when each hook fits completely into the each slot, the inner vertical end of the inner/outer hook contraposes the inner surface of the vertical web against the wall of the column so as to squash.

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7. The prefabricating rack frame as set forth in claim 2, wherein each side end of the cross member- in which the inner/outer hook, the location restrictor and the hole are provided- has larger height than the middle portion of the cross member.

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8. The prefabricating rack frame as set forth in claim 7, wherein at least one reinforcement bead is formed between each longitudinal end and the middle portion of the cross member.

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9. The prefabricating rack frame as set forth in claim 7 or 8, wherein a lower boarder is provided between each longitudinal end and the middle portion of the cross member in a rolling circular arc.

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10. The prefabricating rack frame as set forth in claim 2 or 7, wherein a rectangular opening is formed at the middle position of the vertical web, and each upper/lower part of the opening is bent at a right angle, which configures the location restrictor.

11. The prefabricating rack frame as set forth in claim 2 or 7, wherein a partial lower portion of the vertical web is bent at a right angle, which configures the location restrictor.

12. The prefabricating rack frame as set forth in claim 1, wherein a supporter having a depression is provided at each end of the upper horizontal flange, the supporter has a pair of traversal slots; a supporting member is nested on a pair of traversal slots.

13. The prefabricating rack frame as set forth in claim 12, wherein a stopper is provided at least two points of the cross member, and is configured as a partial cut-off of the upper horizontal flange at the border between the vertical web and the upper horizontal flange; the cut-off portion is stretched upward along the extending direction of the vertical web.

14. The prefabricating rack frame as set forth in claim 12, wherein the supporting member has a pair of hooks at each end thereof; each hook is inserted into the traversal slot so as to squash.

15. The prefabricating rack frame as set forth in claim 1, wherein the column has a pair of round openings formed at the outer side of each lowest inner slot in a parallel way, the vertical web has a hole which overlaps any of the round openings, in which a pin member of a fixing pin is screwed to any round opening through the hole, and the fixing pin has further a head which is fully contacted with the location

restrictor.

16. The prefabricating rack frame as set forth in claim 15, wherein a thread
portion is formed around the circumstance of the pin member, and the pin member
5 has a fastigated point.